

# BIG HOLE RIVER DROUGHT MANAGEMENT PLAN

Big Hole



Watershed Committee

THE BIG HOLE WATERSHED COMMITTEE

ADOPTED 1997

**Version: 2015**

*Amended 1999, 2000, 2002, 2004, 2005, 2007, 2008, 2012, 2012 V2, 2013, 2014, 2015  
BHWC Drought Management Plan Amendments are recorded in a separate document.*

## PURPOSE

The purpose of the Drought Management Plan (DMP) is to mitigate the effects of low stream flows and lethal water temperatures for fisheries (particularly fluvial Arctic grayling) through a voluntary effort among agricultural operations, municipalities, businesses, conservation groups, anglers, and affected government agencies.

## OVERVIEW

The Big Hole Watershed Committee (BHWC) has agreed to this DMP to help mitigate impacts to fish populations during dry years as indicated by flows and temperature. This plan has been designed to take into full account the interests of all affected parties including ranchers, municipalities, anglers, and conservation groups. It is operated in partnership with Montana Fish, Wildlife and Parks (MFWP) and Montana Department of Natural Resources and Conservation (DNRC). The BHWC agrees that if the DMP is to be successful, it will need broad-based support and understanding. BHWC members are committed to securing the support of their constituencies for the successful implementation of this plan. This plan is intended to be modified based on the lessons learned from research projects, increased information from new river gages, and from the experiences gained by implementing this plan. The DMP is reviewed annually by the BHWC and modified as needed.

## ROLES AND RESPONSIBILITIES

Big Hole Watershed Committee roles:

- ❖ Educate interested and affected parties;
- ❖ Develop, adopt, and modify the DMP annually;
- ❖ Receive and act on information regarding stream conditions and snowpack levels throughout the year;
- ❖ Notify interested and affected parties of implementation and secure support; and
- ❖ Evaluate the environmental, social, and economic impacts of the plan.

Montana Fish, Wildlife and Parks (MFWP), Montana Department of Natural Resources and Conservation (DNRC), and the United State Natural Resource Conservation Service (NRCS) roles:

- ❖ Provide accurate, timely information regarding stream conditions and snowpack levels throughout the year;
- ❖ Provide technical assistance in reviewing the plan and monitoring its implementation;
- ❖ Ensure coordination of efforts among all affected government agencies; and
- ❖ Contact and inform media of dry-year plan implementation as well as streamflow and temperature status.

## DEFINITION OF DRY YEAR CONDITIONS AND RECOMMENDED ACTIONS

The BHCW will monitor snowpack levels and forecasted low stream level information provided by the DNRC, USGS, MFWP, and NRCS throughout the year in order to prepare for potential water conservation measures. Streamflow information gathered from the USGS Wisdom, USGS Big Hole River near Wise River, USGS Maiden Rock, USGS Melrose, USGS Glen, and USGS Below Hamilton Ditch nr Twin Bridges gaging stations will be used to initiate specific voluntary actions to conserve water and mitigate the effects of dry year conditions on fish populations from **April 1 through October 31, unless otherwise noted.**

## DETERMINING PROXIMITY TO FLOW TRIGGERS

Flow trigger levels are based on the Average Daily Flow measured in cubic feet per second (cfs). Therefore, flow will be reviewed the following day to determine low flow trigger levels and fishing closures. Average daily flow is calculated on the USGS real-time streamflow website: <http://waterdata.usgs.gov/nwis/rt>

## MONTANA FISH, WILDLIFE AND PARKS (MFWP) STATEWIDE DROUGHT CLOSURE POLICY

MFWP has a statewide river closure policy that is referenced in each of the Big Hole River sections described in this document. MFWP mandates that river closures follow the local drought plan or when absent the Montana Statewide Drought Closure Policy. The Statewide Drought Policy contains triggers for the Big Hole River in three sections; however, this document may or may not be current with the BHCW Drought Management Plan and therefore the BHCW Drought Management Plan supersedes the Montana Statewide Drought Policy. Decisions on MFWP river closures and reopening follow the following process:

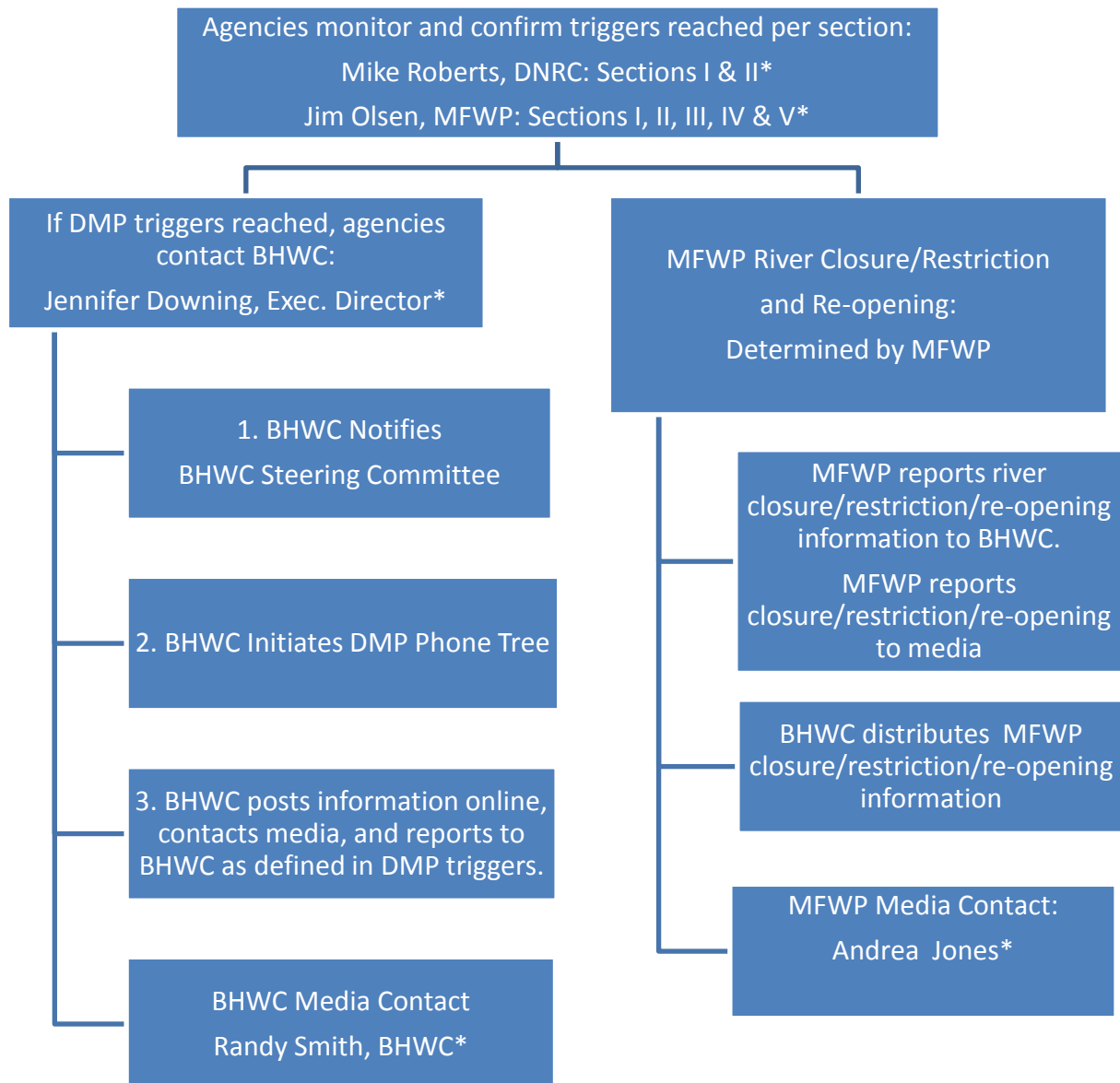
1. River closure or restriction recommendations from the MFWP District Biologists;
2. Recommendations reviewed by the Regional Fish Manager, Fish Bureau Chief, Regional Supervisor, and State Drought Commission. Final determination is made by MFWP Director; and
3. River closures or restrictions due to high water temperature are automatically lifted September 15. River closures or restrictions due to low streamflow are automatically lifted October 31. The river may re-open when these dates are reached or when flows and temperatures meet the re-open criteria (whichever comes first).

View MFWP River closures and re-openings statewide: <http://fwp.mt.gov/news/drought/waterClosure.html>.

## HIGH WATER TEMPERATURE AND FISH HEALTH

Water temperature above 70°F is generally considered stressful to salmonids. Warm water temperatures typically occur between July 15 - September 1 in the Big Hole River. Although water temperature above 70°F can occur before and after this period, cooler night temperatures alleviate long periods of warm daytime temperatures. The upper incipient lethal water temperature (e.g. that temperature that is survivable indefinitely for periods longer than one week by 50% of the population) for Arctic Grayling is 77°F (Loher et. al. 1997). Critical thermal maximum temperature for Arctic grayling is 85°F resulting in instantaneous death. Thermally-induced stress as observed by trained, experienced observers may include any of the following: observed mortality in significant numbers of Age I and older mountain whitefish and other salmonid species in lieu of other logical sources of mortality; outbreaks of stress related piscid diseases such as Bacterial Furunculosis; extraordinary concentrations of fish in thalweg or riffle tailout habitats; hyperactivity (e.g. gasping, rolling, jumping, etc.) of large, concentrated numbers of fish; and frenzied feeding activity at inappropriate times and under inappropriate conditions.

## BHWC DROUGHT MANAGEMENT PLAN DECISION TREE



\* See page 12 for contact information.

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## DMP SECTION I:

### SAGINAW BRIDGE ON SKINNER MEADOWS ROAD TO MOUTH OF THE NORTH FORK OF THE BIG HOLE RIVER

Unique to the upper and middle reaches of the Big Hole River is the implementation of the Candidate Conservation Agreement with Assurances (CCAA) for grayling restoration. While this program is in place, DNRC and MFWP will be responsible for contacting water users to engage in water conservation measures in response to the flow triggers specified for this reach. All other facets of this plan, including contacting outfitters, sportsmen, and the media, will be implemented as described below. For more information on the CCAA visit [http://www.fws.gov/mountain-prairie/species/fish/grayling/CCAA\\_June2006.pdf](http://www.fws.gov/mountain-prairie/species/fish/grayling/CCAA_June2006.pdf).

#### FLOW TARGETS: APRIL 1 - OCTOBER 31

Monitored at the [USGS Wisdom Gage: "Big Hole River bl Big Lake Cr at Wisdom", Number 06024450](#)

160 cfs     *April 1 - June 30.* Water users with CCAA site plans will be required to implement their plans. Non-CCAA water users will be contacted by DNRC and MFWP, advised of flow conditions and encouraged to implement conservation measures. This target is specific to the CCAA goal of maintaining spawning and rearing flow requirements for Arctic grayling.

July 1 – October 31

60 cfs     DNRC and MFWP officials will present data to the Big Hole Watershed Committee and formulate options including CCAA implementation, voluntary reduction of irrigation, stock water diversions, municipal water use, angling, and encouragement of the use of stock watering wells; and prepare to take action. The DMP Phone Tree is initiated to notify water users and outfitters and anglers of low water conditions and encourage conservation measures. Information will be posted online on the BHCW website ([bhwc.org](http://bhwc.org)) as well as BHCW social media platforms.

40 cfs     The DMP Phone Tree will be initiated to provide notice to outfitters and anglers requesting they voluntarily limit their angling activities to earlier, cooler hours of the day. The DMP Phone Tree will be initiated to contact water users and encourage water conservation. The BHCW will contact the media to inform public of low flow conditions. Information will be posted online on the BHCW website ([bhwc.org](http://bhwc.org)) as well as BHCW social media platforms.

20 cfs     *MFWP River Closure:* MFWP will close the Section I to fishing and will not conduct electrofishing surveys (subject to approval or change by the Fluvial Grayling Workgroup). MFWP will contact the media to inform of fishing closures and encourage public conservation efforts. MFWP will provide river closure/re-opening information to BHCW for distribution. The DMP Phone Tree will be initiated to contact water users and outfitters/anglers to advise of river closure and extreme low water conditions and to encourage conservation measures. Information will be posted online on the BHCW website ([bhwc.org](http://bhwc.org)), via BHCW social media platforms, and on the MFWP website.

## TEMPERATURE TARGETS: MAY 1 - SEPTEMBER 15

Monitored at the [USGS Wisdom Gage: "Big Lake Creek at Wisdom", Number 06024450](#)

- Step 1: **MFWP Hoot-Owl Fishing Restrictions:** Hoot-owl fishing restriction will be in place in Section I when daily maximum water temperature reaches or exceeds 73° F (23° C) for at least some period of time during three consecutive days. Hoot-owl fishing closure prohibits fishing between the hours of 2:00 p.m. and 12:00 a.m. (Midnight). They will remain in place until September 15 or until re-opening criteria are met. MFWP will issue press releases to the BHCW, outfitters, news outlets, and the public if hoot-owl restrictions are implemented.
- Step 2: **MFWP River Closure Due to High Temperatures:** River closure in Section I based on water temperature may be implemented if hoot-owl restrictions are inadequate to protect the fishery (e.g., prolonged period where water temperatures exceed 73° F and forecasts are not favorable for cooler temperature, thermal stress in fish observed by biologist, etc.). River closure will remain in place until September 15 or until re-opening criteria have been met. MFWP will issue press releases to the BHCW, outfitters, news outlets, and the public if a river closure is implemented.

## MFWP RE-OPENING CRITERIA IN SECTION I

River flows at the Wisdom gage are greater than 40 cfs for 7 consecutive days and water temperatures are less than 70° F for 3 consecutive days *or* restrictions based on temperature are lifted September 15 and restrictions based on flow are lifted October 31. MFWP will determine re-opening and distribute river re-opening information.

## NOTES

The wetted stream perimeter (i.e. flow below which standing crops of fish decrease) of the upper Big Hole River is 60 cfs (DNRC 1992). While this flow may be reasonable to maintain in ample moisture years and should be the goal for flow preservation efforts, in most years it is not a realistic quantity. Fish population and flow data indicate 40 cfs is feasible to maintain while still sufficient to protect the Arctic grayling population. A minimum survival flow of 20 cfs will provide flows necessary to maintain a wetted channel, provide connectivity to thermal or flow refugia habitats, and ensure survival of the grayling population during brief, critical periods.

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## DMP SECTION II:

### MOUTh OF ThE nOrth FORK OF ThE BIG HOle RIVER TO DICKIE BRIDGE

Unique to the upper and middle reaches of the Big Hole River is the implementation of the Candidate Conservation Agreement with Assurances (CCAA) for grayling restoration. While this program is in place, DNRC and MFWP will be responsible for contacting water users to engage in water conservation measures in response to the flow triggers specified for this reach. All other facets of this plan, including contacting outfitters, sportsmen, and the media, will be implemented as described below. For more information on the CCAA visit [http://www.fws.gov/mountain-prairie/species/fish/grayling/CCAA\\_June2006.pdf](http://www.fws.gov/mountain-prairie/species/fish/grayling/CCAA_June2006.pdf).

#### **FLOW TARGETS:** APRIL 1 - OCTOBER 31

Monitored at [USGS Dickie Bridge Gage: "Big Hole River near Wise River, MT", Number 06024580](#)

450 cfs     *April 1 - June 30.* Water users with CCAA site plans will be required to implement their plans. Non-CCAA water users will be contacted by DNRC and MFWP, advised of flow conditions and encouraged to implement conservation measures. This target is specific to the CCAA goal of maintaining spawning and rearing flow requirements for Arctic grayling.

*July 1 - October 31*

170 cfs     DNRC and MFWP officials will present data to the Big Hole Watershed Committee and formulate options including CCAA implementation, voluntary reduction of irrigation, stock water diversions, municipal water use, angling, and encouragement of the use of stock watering wells; and prepare to take action. The DMP Phone Tree is initiated to notify water users and outfitters and anglers of low water conditions and encourage conservation measures. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.

140 cfs     The DMP Phone Tree will be initiated to provide notice to outfitters and anglers requesting they voluntarily limit their angling activities to earlier, cooler hours of the day. The DMP Phone Tree will be initiated to contact water users and encourage water conservation. The BHWC will contact the media to inform public of low flow conditions. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.

100 cfs     *MFWP River Closure:* MFWP will close Section II to fishing and will not conduct electrofishing surveys (subject to approval or change by the Fluvial Grayling Workgroup). MFWP will contact the media to inform of fishing closures and encourage public conservation efforts. MFWP will provide river closure/reopening information to BHWC for distribution. The DMP Phone Tree will be initiated to contact water users and outfitters/anglers to advise of river closure and extreme low water conditions and to encourage conservation measures. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.

## TEMPERATURE TARGETS: MAY 1 - SEPTEMBER 15

*Monitored by MFWP at the Dickie Bridge Thermograph Site*

- Step 1: **MFWP Hoot-Owl Fishing Restrictions:** Hoot-owl fishing restriction will be in place in Section II when daily maximum water temperature reaches or exceeds 73° F (23° C) for at least some period of time during three consecutive days. Hoot-owl fishing closure prohibits fishing between the hours of 2:00 p.m. and 12:00 a.m. (Midnight). They will remain in place until September 15 or until re-opening criteria are met. MFWP will issue press releases to the BHWC, outfitters, news outlets, and the public if hoot-owl restrictions are implemented.
- Step 2: **MFWP River Closure Due to High Temperatures:** River closure in Section II based on water temperature may be implemented if hoot-owl restrictions are inadequate to protect the fishery (e.g., prolonged period where water temperatures exceed 73° F and forecasts are not favorable for cooler temperature, thermal stress in fish observed by biologist, etc.). River closure will remain in place until September 15 or until re-opening criteria have been met. MFWP will issue press releases to the BHWC, outfitters, news outlets, and the public if a river closure is implemented.

## MFWP RE-OPENING CRITERIA IN SECTION II

River flows at the Dickie Bridge USGS gage are greater than 140 cfs for 7 consecutive days and water temperatures at the Dickie Bridge Thermograph are less than 70° F for 3 consecutive days or restrictions based on temperature are lifted September 15 and restrictions based on flow are lifted October 31. MFWP will determine re-opening and distribute river re-opening information.

## DMP SECTION III: DICKIE BRIDGE TO MFWP MAIDEN ROCK FISHING ACCESS SITE

### FLOW TARGETS: MAY 1 - OCTOBER 31

Monitored at [USGS Maiden Rock Gage: "Big Hole River at Maiden Rock nr Divide, MT", Number 06025250](#)

- 250 cfs DNRC and MFWP officials will present data to the Big Hole Watershed Committee and formulate options including CCAA implementation, voluntary reduction of irrigation, stock water diversions, municipal water use, angling, and encouragement of the use of stock watering wells; and prepare to take action. The DMP Phone Tree is initiated to notify water users, outfitters, and anglers of low water conditions and encourage conservation measures. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.
- 200 cfs The DMP Phone Tree will be initiated to provide notice to outfitters and anglers requesting they voluntarily limit their angling activities to earlier, cooler hours of the day. The DMP Phone Tree will be initiated to contact water users and encourage water conservation. The BHWC will contact the media to inform public of low flow conditions. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.
- 150 cfs MFWP River Closure: MFWP will close Section III to fishing, and will not conduct electrofishing surveys (subject to approval or change by the Fluvial Grayling Workgroup). MFWP will contact the media and inform of fishing closures and encourage public conservation efforts. MFWP will provide river closure/reopening information to BHWC for distribution. The DMP Phone Tree will be initiated to contact water users and outfitters/anglers to advise of river closure and extreme low water conditions and to encourage conservation measures. Information will be posted online on the BHWC website (bhwc.org), via BHWC social media platforms, and on the MFWP website.

### TEMPERATURE TARGETS: MAY 1 - SEPTEMBER 15

Monitored at MFWP Maiden Rock Thermograph

- Step 1: **MFWP Hoot-Owl Fishing Restrictions:** Hoot-owl fishing restriction will be in place in Section III when daily maximum water temperature reaches or exceeds 73° F (23° C) for at least some period of time during three consecutive days. Hoot-owl fishing closure prohibits fishing between the hours of 2:00 p.m. and 12:00 a.m. (Midnight). They will remain in place until September 15 or until re-opening criteria are met. MFWP will issue press releases to the BHWC, outfitters, news outlets, and the public if hoot-owl restrictions are implemented.
- Step 2: **MFWP River Closure Due to High Temperatures:** River closure in Section III based on water temperature may be implemented if hoot-owl restrictions are inadequate to protect the fishery (e.g., prolonged period where water temperatures exceed 73° F and forecasts are not favorable for cooler temperature, thermal stress in fish observed by biologist, etc.). River closure will remain in place until September 15 or until re-opening criteria have been met. MFWP will issue press releases to the BHWC, outfitters, news outlets, and the public if a river closure is implemented.

### MFWP RE-OPENING CRITERIA IN SECTION III

River flows at the USGS Maiden Rock gage are greater than 200 cfs for 7 consecutive days and water temperatures at the MFWP Maiden Rock Thermograph are less than 70° F for 3 consecutive days *or* restrictions based on temperature are lifted September 15 and restrictions based on flow are lifted October 31. MFWP will determine re-opening and distribute river re-opening information.



## DMP SECTION IV: MFWP MAIDEN ROCK FISHING ACCESS SITE TO NOTCH BOTTOM FISHING ACCESS SITE

### FLOW TARGETS: MAY 1 - OCTOBER 31

Monitored at [USGS Glen Gage: "Big Hole River near Glen, MT", Number 06026210](#)

- 250 cfs DNRC and MFWP officials will present data to the Big Hole Watershed Committee and formulate options including CCAA implementation, voluntary reduction of irrigation, stock water diversions, municipal water use, angling, and encouragement of the use of stock watering wells; and prepare to take action. The DMP Phone Tree is initiated to notify water users, outfitters, and anglers of low water conditions and encourage conservation measures. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.
- 200 cfs The DMP Phone Tree will be initiated to provide notice to outfitters and anglers requesting they voluntarily limit their angling activities to earlier, cooler hours of the day. The DMP Phone Tree will be initiated to contact water users and encourage water conservation. The BHWC will contact the media to inform public of low flow conditions. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.
- 150 cfs *MFWP River Closure:* MFWP will close Section IV to fishing according to the MFWP River Closure Policy, and will not conduct electrofishing surveys. MFWP will contact the media and inform of fishing closures and encourage public conservation efforts. MFWP will provide river closure/reopening information to BHWC for distribution. The DMP Phone Tree will be initiated to contact water users and outfitters/anglers to advise of river closure and extreme low water conditions and to encourage conservation measures. Information will be posted online on the BHWC website (bhwc.org), via BHWC social media platforms, and on the MFWP website.

### TEMPERATURE TARGETS: MAY 1 - SEPTEMBER 15

Monitored at the MFWP Notch Bottom Thermograph Site

- Step 1: **MFWP Hoot-Owl Fishing Restrictions:** Hoot-owl fishing restriction will be in place in Section IV when daily maximum water temperature reaches or exceeds 73° F (23° C) for at least some period of time during three consecutive days. Hoot-owl fishing closure prohibits fishing between the hours of 2:00 p.m. and 12:00 a.m. (Midnight). They will remain in place until September 15 or until re-opening criteria are met. MFWP will issue press releases to the BHWC, outfitters, news outlets, and the public if hoot-owl restrictions are implemented.
- Step 2: **MFWP River Closure Due to High Temperatures:** River closure in Section IV based on water temperature may be implemented if hoot-owl restrictions are inadequate to protect the fishery (e.g., prolonged period where water temperatures exceed 73° F and forecasts are not favorable for cooler temperature, thermal stress in fish observed by biologist, etc.). River closure will remain in place until September 15 or until re-opening criteria have been met. MFWP will issue press releases to the BHWC, outfitters, news outlets, and the public if a river closure is implemented.

### MFWP RE-OPENING CRITERIA IN SECTION IV

River flows at the Glen gage are greater than 200 cfs for 7 consecutive days and water temperatures at the Notch Bottom thermograph are less than 70° F for 3 consecutive days *or* restrictions based on temperature are lifted September 15 and restrictions based on flow are lifted October 31. MFWP will determine re-opening and distribute river re-opening information. *Note: Section IV begins at the Montana Fish, Wildlife and Parks Maiden Rock ("Maidenrock") Fishing Access Site, not the Bureau of Land Management Maiden Rock Fishing Access Sites.*

## DMP SECTION V: NOTCH BOTTOM FISHING ACCESS SITE TO CONFLUENCE OF THE BIG HOLE RIVER WITH THE JEFFERSON RIVER

### FLOW TARGETS: MAY 1 - OCTOBER 31

Monitored at [USGS "Big Hole R bl Hamilton Ditch nr Twin Bridges, MT", Number 06026420](#)

- 200 cfs DNRC and MFWP officials will present data to the Big Hole Watershed Committee and formulate options including CCAA implementation, voluntary reduction of irrigation, stock water diversions, municipal water use, angling, and encouragement of the use of stock watering wells; and prepare to take action. The DMP Phone Tree is initiated to notify water users, outfitters, and anglers of low water conditions and encourage conservation measures. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.
- 150 cfs The DMP Phone Tree will be initiated to provide notice to outfitters and anglers requesting they voluntarily limit their angling activities to earlier, cooler hours of the day. The DMP Phone Tree will be initiated to contact water users and encourage water conservation. The BHWC will contact the media to inform public of low flow conditions. Information will be posted online on the BHWC website (bhwc.org) as well as BHWC social media platforms.
- 100 cfs *MFWP River Closure:* MFWP will close Section V to fishing according to the MFWP River Closure Policy and will not conduct electrofishing surveys. MFWP will contact the media and inform of fishing closures and encourage public conservation efforts. MFWP will provide river closure/reopening information to BHWC for distribution. The DMP Phone Tree will be initiated to contact water users and outfitters/anglers to advise of river closure and extreme low water conditions and to encourage conservation measures. Information will be posted online on the BHWC website (bhwc.org), via BHWC social media platforms, and on the MFWP website.

### TEMPERATURE TARGETS: MAY 1 - SEPTEMBER 15

Monitored at [USGS "Big Hole R bl Hamilton Ditch nr Twin Bridges, MT", Number 06026420](#)

- Step 1: **MFWP Hoot-Owl Fishing Restrictions:** Hoot-owl fishing restriction will be in place in Section IV when daily maximum water temperature reaches or exceeds 73° F (23° C) for at least some period of time during three consecutive days. Hoot-owl fishing closure prohibits fishing between the hours of 2:00 p.m. and 12:00 a.m. (Midnight). They will remain in place until September 15 or until re-opening criteria are met. MFWP will issue press releases to the BHWC, outfitters, news outlets, and the public if hoot-owl restrictions are implemented.
- Step 2: **MFWP River Closure Due to High Temperatures:** River closure in Section IV based on water temperature may be implemented if hoot-owl restrictions are inadequate to protect the fishery (e.g., prolonged period where water temperatures exceed 73° F and forecasts are not favorable for cooler temperature, thermal stress in fish observed by biologist, etc.). River closure will remain in place until September 15 or until re-opening criteria have been met. MFWP will issue press releases to the BHWC, outfitters, news outlets, and the public if a river closure is implemented.

### MFWP RE-OPENING CRITERIA FOR SECTION V

River flows at the Big Hole River at Hamilton Ditch USGS gage exceed 200 cfs for 7 consecutive days or restrictions based on temperature are lifted September 15 and restrictions based on flow are lifted October 31. MFWP will determine reopening and distribute river reopening information to the media.

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## NOTIFICATION AND MONITORING PROCESS

MFWP and DNRC will keep the Big Hole Watershed Committee fully informed throughout the year regarding streamflows, water temperature, and snowpack data. This will allow for timely information to help in encouraging appropriate courses of action.

Streamflow conditions, water temperature, and snowpack levels will be a standing agenda item at each Big Hole Watershed Committee meeting. Based on the year-long monitoring of weather conditions that may influence flow, the Big Hole Watershed Committee will publish a notification of impending dry year conditions. Notifications will be sent to the press, ranchers, municipalities, outfitters, conservation and sportsmen groups, and posted online on the BHWC website and social media sites.

While most attention is on late summer conditions, spring flows are equally important for channel maintenance, bed load and sediment movement, and spawning habitat for spring and early summer spawners including Arctic grayling, rainbow trout, cutthroat trout, long nose and common suckers.

The BHWC will issue updates to irrigators during drought periods. Weekly updates will be provided in hard copy, electronic mailings and on the BHWC web site. In non-drought periods the BHWC will issue regular updates as needed.

The BHWC will work with MFWP on press releases and other public outreach efforts. The BHWC will work with local newspapers and televisions to secure flow updates in these communication mediums.

The BHWC will issue an annual update in the form of a mailing (hard copy and electronic) which will include: a copy of the most recent Drought Management Plan, flow forecasting, updates on water conservation programs and assistance, and other related news items.

MFWP and DNRC will offer assistance to irrigators who are willing to cut back on water diversions. The BHWC will hold an open public meeting to present the information and conduct discussions with all parties concerning proposed actions.

## PUBLIC EDUCATION

The BHWC will develop and distribute educational material with agency assistance, describing the need for a drought management plan, its provisions, and anticipated benefits.

Information will be provided on the possible actions people can take to mitigate damage from dry years including but not limited to:

- ❖ Voluntary reduction of irrigation and diversion stock watering during critical times;
- ❖ Water conservation policies by municipalities and industries during sensitive times;
- ❖ Emergency water reduction policies by municipalities and industries during critical times;
- ❖ Reduced recreation uses during sensitive times;
- ❖ Elimination of fall recreation uses at critical times; and
- ❖ Encourage Big Hole watershed residents to reduce unnecessary water use including lawn watering, small irrigation systems, washing, etc.

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## RESOURCES

### INFORMATION CONTACT

Randy Smith	BHWC Chairman	406-835-3451	6sranch@3rivers.net -- Media Contact
Jennifer Downing	BHWC Executive Director	406-960-4855	jdowning@bhwc.org

### OTHER CONTACTS

Montana Department of Fish, Wildlife & Parks (MFWP)

Jim Olsen, Big Hole River Fisheries Biologist 406-533-8451 JimOlsen@mt.gov

Andrea Jones, Information & Education Manager 406-994-6931 anjones@mt.gov -- Media Contact

Montana Department of Natural Resources & Conservation (DNRC)

Mike Roberts, Hydrologist 406-444-6641 miroberts@mt.gov

Montana Drought Monitoring 406-444-5354

## RESOURCES

NRIS Drought Report

<http://nris.mt.gov/drought/>

USGS Real Time Flow Data

<http://waterdata.usgs.gov/mt/nwis/current?type=flow>

NRCS Snowpack Monitoring

<http://www.wcc.nrcs.usda.gov/snow/>

Montana Statewide Drought Closure Policy

<http://fwp.mt.gov/news/drought/closurepolicy.html>

<http://fwp.mt.gov/news/drought/>

Big Hole Watershed Committee

<http://bhwc.org/>

BHWC Drought Management Plan Phone Tree (DMP Phone Tree): The DMP Phone Tree is a separate document that lists the phone contacts made when DMP triggers are reached and used by phone tree leaders.

BHWC Drought Management Plan Amendments: The DMP is reviewed annually. When changes are made to the plan, they are recorded in the amendments with reasoning for the change. The amendments are provided in a separate document.

# Big Hole



Watershed Committee

## BIG HOLE WATERSHED COMMITTEE

### BIG HOLE RIVER DROUGHT MANAGEMENT PLAN - VERSION 2015

#### QUICK REFERENCE

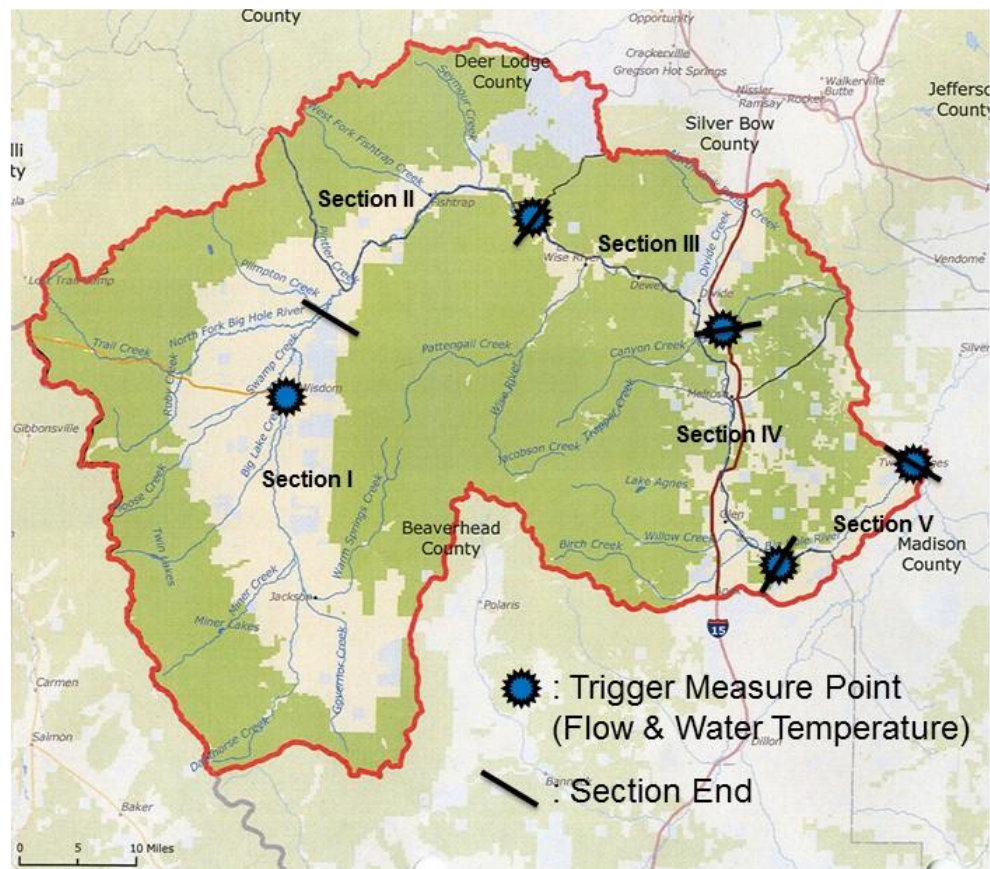
SECTION	FLOW TRIGGERS APRIL 1 - OCTOBER 31	TEMPERATURE TRIGGERS
I: Saginaw Bridge on Skinner Meadows Road to North Fork Big Hole River Mouth	<p>160 cfs - April 1 to June 30 target for Arctic grayling spawning.</p> <p>60 cfs - Prepare for Conservation</p> <p>40 cfs - Conservation</p> <p>20 cfs - MFWP River Closure</p> <p><a href="#">Measured at USGS Wisdom Gage (06024450)</a></p>	<p><b>Step 1:</b></p> <p><b>MFWP Hoot-Owl Fishing Restrictions:</b> Hoot-owl fishing restriction will be in place when daily maximum water temperature reaches or exceeds 73° F (23° C) for at least some period of time during three consecutive days. Hoot-owl fishing closure prohibits fishing between the hours of 2:00 p.m. and 12:00 a.m. (Midnight). They will remain in place until September 15 or until re-opening criteria are met.</p>
II: North Fork of Big Hole River confluence to Dickie Bridge	<p>450 cfs - April 1 to June 30 target for Arctic grayling spawning.</p> <p>170 cfs - Prepare for Conservation</p> <p>140 cfs - Conservation</p> <p>100 cfs - MFWP River Closure</p> <p><a href="#">Measured at USGS Big Hole River near Wise River Gage (06024580)</a></p>	<p><b>Step 2:</b></p> <p><b>MFWP River Closure Due to High Temperatures:</b> River closure based on water temperature may be implemented if hoot-owl restrictions are inadequate to protect the fishery (e.g., prolonged period where water temperatures exceed 73° F and forecasts are not favorable for cooler temperature, thermal stress in fish observed by biologist, etc.). Closure will remain in place until September 15 or until re-opening criteria are met.</p>
III: Dickie Bridge to MFWP Maiden Rock Fishing Access Site	<p>250 cfs - Prepare for Conservation</p> <p>200 cfs - Conservation</p> <p>150 cfs - MFWP River Closure</p> <p><a href="#">Measured at USGS Maiden Rock Gage (06025250)</a></p>	<p><i>Sections temperature measured at:</i></p> <p>I: <a href="#">USGS Wisdom Gage</a></p> <p>II: <a href="#">USGS BHR near Wise River*</a></p> <p>III: <a href="#">USGS Maiden Rock*</a></p> <p>IV: <a href="#">USGS Glen Gage*</a></p> <p>V: <a href="#">USGS Hamilton Ditch Gage</a></p>
IV: MFWP Maiden Rock to Notch Bottom Fishing Access Sites	<p>250 cfs - Prepare for Conservation</p> <p>200 cfs - Conservation</p> <p>150 cfs - MFWP River Closure</p> <p><a href="#">Measured at USGS Glen Gage (06026210)</a></p>	<p><a href="#">MFWP Statewide River Restrictions and Closures</a></p>
V: Notch Bottom FAS to confluence of Big Hole River with Jefferson River	<p>200 cfs - Prepare for Conservation</p> <p>150 cfs - Conservation</p> <p>100 cfs - MFWP River Closure</p> <p><a href="#">Measured at USGS Big Hole River below Hamilton Ditch near Twin Bridges Gage (06026420)</a></p>	<p><i>* MFWP Thermographs are at site as second reference for triggers.</i></p>





## Big Hole River Drought Management Plan 2015

### River Sections and Measure Points



The map above marks the 2015 Big Hole River Drought Management Plan river sections and their measure points. The Big Hole Watershed is outlined in red. The river sections are marked as Sections I-V. The Big Hole River originates in Section I and flows downstream to Section V.